

REMARKS

Claims 9-13 are pending. Claims 9, 12, and 13 are amended. No new matter is added as a result of the above amendments. Reconsideration of the claims is respectfully requested in light of the above amendments and the following remarks.

Objection to Claim, Claim 13

The examiner objects claim 13 because of the informality of a typo. By this Response, claim 13 is amended to correctly recite “wherein said power is between about 1KW and 50KW.” Accordingly, Applicants respectfully request the withdrawal of the objection to claim 13.

Objection to Specification

The examiner objects the specification as failing to provide proper antecedent basis for the claimed subject matter. According to the MPEP section 2163.06 III, entitled “Claimed Subject Matter Not Disclosed in Remainder of Specification,” “the claims as filed in the original specification are part of the disclosure and therefore, if an application as originally filed contains a claim disclosing material not disclosed in the remainder of the specification, the applicant may amend the specification to include the claimed subject matter.” *In re Benno*, 768 F.2d 1340, 226 USPQ 683 (Fed. Cir. 1985).

By this Response, amendments have been made to the specification to include subject matter as recited in claims filed in the original specification. One of the amendments made to the specification includes the feature of “forming a via hole that extends from said upper surface to said first wiring layer; patterning and etching said dielectric layer, thereby forming a trench having a bottom surface, a mouth, and side walls, said trench being disposed so as to fully overlap said via hole and to extend a depth below said upper surface, said depth being said depth being greater than a depth of said via hole, wherein the depth of the via hole extends a distance from said trench bottom surface to the first wiring layer.” These features are supported in Figure 7 of the current

specification. Another amendment made to the specification includes the feature of “wherein the metal is selected from the group consisting of copper, gold, and silver.”

In addition, the last feature of claim 9 is amended to recite “forming a metal via whose aspect ratio is less than about 6:1 whereby its electrical resistance is less than about 1 ohm.” This feature is supported on page 12, line 6 of the current specification.

Furthermore, the examiner alleges that the specification contains no disclosure of “aspect ratio less than about 6:1.” Applicants respectfully disagree. To the contrary, page 3 of the current specification states that “via holes extending downwards from the trench bottom to the next wiring level (i.e. dual damascene structures) had to be correspondingly deeper (i.e. their aspect ratio would typically be at least 6:1).” Therefore, Applicants respectfully submit that the specification contains disclosure of the features as recited in claim 9.

Accordingly, Applicants respectfully request the withdrawal of the objection to the specification.

Rejections under 35 U.S.C. §112, Second Paragraph, Claims 9-11

The examiner rejects claims 9-11 under 35 U.S.C. § 112, second paragraph, for failing to point out and distinctly claim the subject matter which the applicant regard as his invention. The examiner alleges that the phrases “the second wiring layer” and “metal via” in the last step of claim 9 render the claim indefinite, because it is unclear if the phrase both refer to the same metal structure.

By this Response, claim 9 is amended to recite “planarizing said filler layer to form a metal conductive via whose aspect ratio is less than about 6:1 whereby its electrical resistance is less than about 1 ohm.” Thus, the limitation of “second wiring layer” has been removed. Accordingly, Applicants respectfully submit that claim 9 is now rendered definite. The withdrawal of the rejection to claims 9-11 under 35 U.S.C. § 112, second paragraph, is respectfully requested.

Obviousness-type Double Patenting, Claims 9-12

The examiner rejects claims 9-12 under the judicially-created doctrine of obviousness-type double patenting as being unpatentable in view of claims 1 of Shue (U.S. Patent No. 6,686,280), which was filed Nov 20, 2001. Applicants have submitted herewith a terminal disclaimer under 37 CFR § 1.321, thus obviating the double patenting rejection. Applicants respectfully request that the rejection be withdrawn.

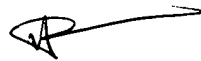
The examiner rejects claims 11-12 under the judicially-created doctrine of obviousness-type double patenting as being unpatentable in view of claims 9 of Shue (U.S. Patent No. 6,686,280), which was filed Nov 20, 2001. Applicants have submitted herewith a terminal disclaimer under 37 CFR § 1.321, thus obviating the double patenting rejection. Applicants respectfully request that the rejection be withdrawn.

Conclusion

It is clear from all of the foregoing that independent claims 9 and 12 are in condition for allowance. Dependent claims 10, 11 and 13 depend from and further limit independent claims 9 and 12 and therefore are allowable as well.

An early formal notice of allowance of claims 9-13 is requested.

Respectfully submitted,



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<p>I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner For Patents, P.O. Box 1450, Alexandria, VA 22313-1450</p> <p>on: <u>12-21-05</u></p> <p><u>Bonnie Boyle</u> Signature of person mailing paper and fee</p>
